Experimental Neurology

A JOURNAL OF NEUROSCIENCE RESEARCH

EDITOR-IN-CHIEF
John R. Sladek, Jr.
University of Health Sciences/
The Chicago Medical School

FOUNDING EDITOR
William F. Windle

VOLUME 122, 1993

ACADEMIC PRESS, INC.
Harcourt Brace & Company
San Diego New York Boston London Sydney Tokyo Toronto

Copyright © 1993 by Academic Press, Inc.
All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1993 articles are as shown on the article title page; if no fee code appears on the title page, the copy fee is the same as for current articles.

0014-4886/93 $5.00

MADE IN THE UNITED STATES OF AMERICA

This journal is printed on acid-free paper.

Contents of Volume 122

Number 1, July 1993

Guest Editorial

WILLIAM J. FREED. Neural Transplantation: A Special Issue 1

Regular Articles

ROBERT C. HEIM, GEORGE WILLINGHAM, AND WILLIAM J. FREED. A Comparison of Solid Intraventricular and Dissociated Intraparenchymal Fetal Substantia Nigra Grafts in a Rat Model of Parkinson's Disease: Impaired Graft Survival Is Associated with High Baseline Rotational Behavior 5

J. R. SLADEK, JR., J. D. ELSWORTH, R. H. ROTH, L. E. EVANS, T. J. COLLIER, S. J. COOPER, J. R. TAYLOR, AND D. E. REDMOND, JR. Fetal Dopamine Cell Survival after Transplantation Is Dramatically Improved at a Critical Donor Gestational Age in Nonhuman Primates 16

JAMES M. KERNS, NILS DANIELSEN, BJÖRN HOLMQUIST, MARTIN KANJE, AND GÖRAN LUNDBORG. The Influence of Predegeneration on Regeneration through Peripheral Nerve Grafts in the Rat 28

DWAINE F. EMERICH, PATRICIA E. MCDERMOTT, PAULA M. KRUEGER, BEATA FRYDEL, PAUL R. SANBERG, AND SHELLEY R. WINN. Polymer-Encapsulated PC12 Cells Promote Recovery of Motor Function in Aged Rats 37

MITSUO ISONO, MACIEJ POLTORAK, HENRIETTA KULAGA, ANTHONY J. ADAMS, AND WILLIAM J. FREED. Certain Host–Donor Rat Strain Combinations Do Not Reject Brain Allografts after Systemic Sensitization 48

ISABELLA GAVAZZI AND TIM COWEN. Axonal Regeneration from Transplanted Sympathetic Ganglia Is Not Impaired by Age 57

T. K. MORRISSEY, Å. SEIGER, AND V. R. HOLETS. Effect of Grafting Order on Innervation of Spinal Cord Transplants by Grafted Locus Coeruleus Neurons *in Oculo* 65

M. ANGELA CENCI, OLA G. NILSSON, PETER KALÉN, AND ANDERS BJÖRKLUND. Characterization of *in Vivo* Noradrenaline Release from Superior Cervical Ganglia or Fetal Locus Coeruleus Transplanted to the Subcortically Deafferented Hippocampus in the Rat 73

WUTIAN WU, DAVID E. SCOTT, AND R. J. REITER. Transplantation of the Mammalian Pineal Gland: Studies of Survival, Revascularization, Reinnervation, and Recovery of Function 88

DIANE HOFFMAN, XANDRA O. BREAKEFIELD, M. PRISCILLA SHORT, AND PATRICK AEBISCHER. Transplantation of a Polymer-Encapsulated Cell Line Genetically Engineered to Release NGF 100

C. T. MONTGOMERY AND J. A. ROBSON. Implants of Cultured Schwann Cells Support Axonal Growth in the Central Nervous System of Adult Rats 107

ROGER BARKER, STEPHEN DUNNETT, AND JAMES FAWCETT. Immunohistochemical Identification of Rat Adrenal Cortical Tissue *in Situ, in Vitro,* and in Intracerebral Adrenal Grafts 125

STEPHEN M. ONIFER, SCOTT R. WHITTEMORE, AND VICKY R. HOLETS. Variable Morphological Differentiation of a Raphé-Derived Neuronal Cell Line Following Transplantation into the Adult Rat CNS 130

JOHAN BENGZON, ZAAL KOKAIA, AND OLLE LINDVALL. Specific Functions of Grafted Locus Coeruleus Neurons in the Kindling Model of Epilepsy 143

HAIFENG ZHOU AND RAYMOND D. LUND. Effects of the Age of Donor or Host Tissue on Astrocyte Migration from Intracerebral Xenografts of Corpus Callosum 155

11 731HI XL 1785
9/94 31249-150

Brief Communication

DAVE A. TOMEY AND JOHN A. HECKROTH. Transplantation of Normal Embryonic Cerebellar Cell Suspensions into the Cerebellum of *Lurcher* Mutant Mice 165

Number 2, August 1993

DAN ZHOU AND MARIAN DIFIGLIA. Basic Fibroblast Growth Factor Enhances the Growth of Postnatal Neostriatal GABAergic Neurons *in Vitro* 171

JIANXIN BAO, PAUL J. REIER, AND JOHN B. MUNSON. Enhancement of c-fos Expression in Neurons of the Rat Spinal Cord after Partial Denervation: Evidence for Functional Plasticity 189

DORIS NONNER, BARRY J. BRASS, ELLEN F. BARRETT, AND JOHN N. BARRETT. Reversibility of Nerve Growth Factor's Enhancement of Choline Acetyltransferase Activity in Cultured Embryonic Rat Septum 196

JOHN H. MCLEAN, MICHAEL T. SHIPLEY, DAVID I. BERNSTEIN, AND DALE CORBETT. Selective Lesions of Neural Pathways Following Viral Inoculation of the Olfactory Bulb 209

KATARZYNA SIERADZAN AND GERTA VRBOVÁ. Observations on the Survival of Grafted Embryonic Motoneurons in the Spinal Cord of Developing Rats 223

KATARZYNA SIERADZAN AND GERTA VRBOVÁ. The Ability of Developing Spinal Neurons to Reinnervate a Muscle through a Peripheral Nerve Conduit Is Enhanced by Cografted Embryonic Spinal Cord 232

EERO CASTRÉN, MARIA DA PENHA BERZAGHI, DAN LINDHOLM, AND HANS THOENEN. Differential Effects of MK-801 on Brain-Derived Neurotrophic Factor mRNA Levels in Different Regions of the Rat Brain 244

SONJA Y. GROOMS, LOUIS TERRACIO, AND LESLIE SARGENT JONES. Anatomical Localization of β1 Integrin-like Immunoreactivity in Rat Brain 253

M. J. DOLLEMAN-VAN DER WEEL, A. NIJSSEN, AND H. W. M. STEINBUSCH. Morphological and Behavioral Drawbacks of Fetal Dopaminergic Grafts, Prelabled with *Phaseolus vulgaris* Leucoagglutinin 260

JOHAN LUTHMAN, MARILYN N. FRIEDEMANN, BARRY J. HOFFER, AND GREG A. GERHARDT. *In Vivo* Electrochemical Measurements of Exogenous Dopamine Clearance in Normal and Neonatal 6-Hydroxydopamine-Treated Rat Striatum 273

JOHN Q. TROJANOWSKI, JOHN R. MANTIONE, JAE HONG LEE, DERICE P. SEID, TIMOTHY YOU, LANDON J. INGE, AND VIRGINIA M.-Y. LEE. Neurons Derived from a Human Teratocarcinoma Cell Line Establish Molecular and Structural Polarity Following Transplantation into the Rodent Brain 283

DORIT BENBASSAT AND MICHA E. SPIRA. Survival of Isolated Axonal Segments in Culture: Morphological, Ultrastructural, and Physiological Analysis 295

CAROLINA ESCOBAR AND MANUEL SALAS. Neonatal Undernutrition and Amygdaloid Nuclear Complex Development: An Experimental Study in the Rat 311

PHILIPPE PERUZZI, PIERRE LACOMBE, VÉRONIQUE MORO, ELVIRE VAUCHER, FRANÇOISE LEVY, AND JACQUES SEYLAZ. The Cerebrovascular Effects of Physostigmine Are Not Mediated through the Substantia Innominata 319

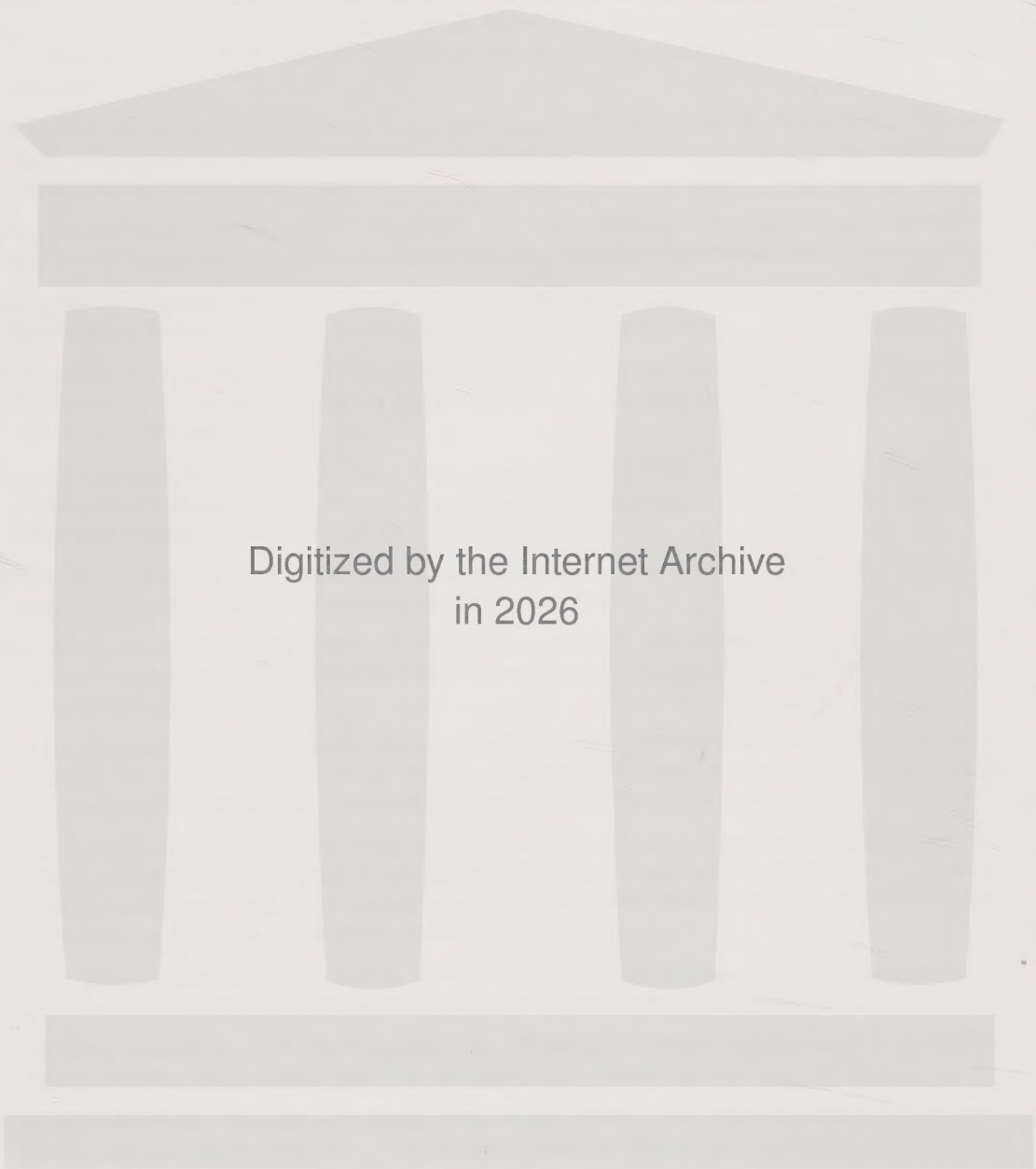
WARREN J. STRITTMATTER, DAVID Y. HUANG, RAMANINDER BHASIN, ALLEN D. ROSES, AND DMITRY GOLDGABER. Avid Binding of βA Amyloid Peptide to Its Own Precursor 327

U. YINON, R. SHEMESH, H. ARDA, G. DOBIN, AND P. P. JAROS. Physiological Studies in Deafferented Visual Cortex Cells of Cats Following Transplantation of Fetal Xenografts from the Rat's Cortex 335

Author Index for Volume 122 342

NOTICE

The Subject Index for Volume 122 will appear in the December 1993 issue as part of a cumulative index for the year 1993.



Digitized by the Internet Archive
in 2026

https://archive.org/details/experimental-neurology_1993_122_contents

EXPERIMENTAL NEUROLOGY

A Journal of Neuroscience Research

Information for Authors

Experimental Neurology publishes the results and conclusions of original research in neuroscience with a particular emphasis on novel findings in neural development, regeneration, plasticity, and transplantation. Emphasis is also placed on basic mechanisms underlying or related to neurological disorders. Although the journal does not consider case reports for publication, information that bridges basic and clinical questions is of a high priority. Brief communications of important new data and scholarly reviews of important questions will be considered for publication. Manuscripts in other areas of neuroscience will be considered if they show relevance to the primary mission of the journal. Policy regarding publication of experiments on unanesthetized animals conforms with the standards for use of laboratory animals established by the Institute of Laboratory Animal Resources, U.S. National Academy of Sciences. Experiments in which curariform agents are used must be justified and details as to steps taken to reduce or avoid distress to the animal must be provided, particularly with regard to electrical stimulation. Exposition must be as brief as is consistent with accuracy and clarity. Lengthy bibliographic lists should be avoided.

Manuscript Submission. Submit the original manuscript and three copies. These will **not** be returned to the author. One original glossy print of each illustration is required, along with three photocopies or laser copies. Four original glossy prints should be provided if machine copies are not clear and sharp. **These prints will not be returned to the author.** Submissions should be sent to:

John R. Sladek, Jr., Ph.D.
Editor-in-Chief, *Experimental Neurology*
The Neuroscience Institute
University of Health Sciences/
The Chicago Medical School
3333 Green Bay Road
North Chicago, Illinois 60064-3095

Telephone: (708) 578-3000

Manuscripts are accepted for editorial review with the understanding that the content has not been published previously except as a preliminary report and is not submitted elsewhere for publication. **Furthermore, it is understood that they will have received the appropriate clearance and the approval of all authors necessary for publication prior to submission.** Articles and any other materials published in *Experimental Neurology* represent the opinions of the authors and should not be construed to reflect the opinions of the Editors or Publisher.

Authors submitting a manuscript do so on the understanding that if it is accepted for publication, copyright in the article, including the right to reproduce the article in all forms and media, shall be assigned exclusively to the Publisher. The Publisher will not refuse any reasonable request by the author for permission to reproduce any of his or her contributions to the journal.

Consideration for Publication. Each manuscript received by the editorial office is screened initially by a member of the Editorial Board in order to judge its relevancy to the interests of the journal. Those contributions judged to be of sufficient interest then are assigned to one or more reviewers who are asked to provide both a critique and priority rating.

Cover Photographs. Authors are encouraged to submit potential cover photographs for consideration directly to the Editor at the time of submission of a manuscript.

Preparation of Manuscript. Prepare typewritten or word-processed manuscripts double-spaced throughout, including abstract, acknowledgments, and references, on one side of 8.5 × 11-inch (21.6 × 28-cm) or A4 white paper and in *Experimental Neurology* format. Number the pages consecutively. All authors are encouraged but not restricted to limit the length of manuscripts submitted to about 20 pages (21.6 × 28 cm), double-spaced, including tables and figures (about 6 printed pages).

Page 1 should contain the article title, authors' names, and complete affiliations. At the bottom of page 1 place any footnotes to the title, indicated by superscript *, †, ‡. *Key words* should also be included at the bottom of this page. Ideally, 6–8 identifiers should be provided to aid the indexing and review process. *Page 2* should contain a proposed running head (abbreviated form of the title) of less than 50 characters, the name, mailing address, and telephone number and/or fax number of the author to whom proofs should be sent, and a short abstract. The *abstract* should be a summary of the problem, the methods, and the results and their significance in a single paragraph of 250 words or less.

Most recommendations of the Council of Biology Editors are to be followed; consult the *CBE Style Manual,* 5th ed. (Council of Biology Editors, 9650 Rockville Pike, Bethesda, MD 20814). Follow *Webster's New International Dictionary,* Third Edition, Unabridged (1986) for spelling and division of words. Nonstandard abbreviations should be minimal. Use numerals with standard units of measurement and for any number above nine. The metric system must be used and abbreviations made according to the International System (*Standard Metric Practice Guide,* American Society for Testing Materials, Philadelphia, 1970).

Brief Communications. Short manuscripts of no more than 6 or 7 double-spaced typed pages and limited to 1 figure and/or table (approximately 2 printed pages) will be considered. They should have an abstract of a few sentences, but no section headings.

Critical Reviews. Authors should first communicate with the Editor-in-Chief describing the topic and intent of potential review articles prior to submission to the journal. Reviews should emphasize emerging fields or should critically analyze existing data and questions. At the discretion of the Editor-in-Chief these reviews may be accompanied by scientific dialogue from other contributors.

Illustrations. Number figures with Arabic numerals in order of appearance in the text. Type all legends consecutively on a separate sheet. Plan all figures to fit the proportions of the printed page (7 1/8 × 9 in.; 18.2 × 23 cm). All illustrations should be in finished form suitable for reproduction and no larger than 8.5 × 11 in. (21.6 × 28 cm). Identify all figures on the back lightly *in soft pencil* with the author(s) name(s) and figure number; indicate the TOP. Each component of a composite figure should be lettered consistently on the lower or upper left face and referred to in text and caption.

Lettering on drawings should be of professional quality or generated by *high-resolution computer* graphics and should be large enough (10–12 points) to take a reduction of 50 to 60%. Freehand, penciled, or typewritten lettering is not acceptable. Drawings should be made in black India ink on tracing linen, smooth-surface white paper, or Bristol board. Alternatively, *high-quality computer* graphics may be acceptable. Symbols used to identify points within a graph should be large enough that they will be easily distinguishable after reduction. Plot graphs on blue coordinate or white paper. Grid lines that are to reproduce must be shown in black. All drawings may be submitted as glossy prints. Photocopies submitted as original artwork are not acceptable.

Halftone photographs should be on glossy paper and as rich in contrast as possible. Only those parts of the photograph that are necessary to illustrate the matter under discussion should be submitted. Areas that are not essential should be cut off. For best reproduction provide clear, sharp, glossy prints with adequate contrast. The best results will be obtained if authors match the contrast and density of all figures appearing on a single plate. If this is not possible, provide unmounted original art. Providing an overlay that indicates the most critical areas of micrographs will also aid in ensuring high-quality reproduction.

Illustrations in color can be accepted only if the authors defray the cost. If mounting is necessary, color figures must be mounted on 10- to 12-point *flexible* illustration board or paper due to the nature of the reproduction process.

Tables. Organize tables horizontally on the page if possible. Tables should be numbered consecutively with Arabic numerals in order of appearance in the text and collected at the end of the manuscript. Type each table double-spaced on a separate page with a short descriptive caption directly above the table and with any necessary footnotes (indicated by superscript lowercase *italic* letters) typed directly below the table.

References. Use numerals in parentheses in the text. List references alphabetically and number consecutively, but do not incorporate "personal communications" or "unpublished observations" into this list. Abbreviations of journal titles should conform to *Index Medicus,* a complete list of which appears in its December issue. Note below some examples of punctuation and format for *Experimental Neurology.*

1. BÉDARD, P. J., R. BOUCHER, AND T. DI PAOLO. 1990. Effect of dopamine D_1 and D_2 receptor stimulation in MPTP monkeys. In *Disorders of Movement* (N. Quinn and P. Jenner, Eds.), pp. 187–192. Academic Press, London.
2. BRODAL, A. 1981. *Neurological Anatomy in Relation to Clinical Medicine,* 3rd ed. Oxford Univ. Press, New York.
3. VACA, K., AND E. WENDT. 1992. Divergent effects of astroglial and microglial secretions on neuron growth and survival. *Exp. Neurol.* **118:** 62–72.

Proofs. Two sets of proofs and the original manuscript are sent to the author designated to receive them. To avoid delay in publication, only necessary changes should be made, and proofs and manuscript should be returned promptly. Authors will be charged for alterations that exceed 10% of the total cost of composition.

Reprints. Fifty reprints without covers will be provided free of charge to the corresponding author. Additional reprints may be ordered using the form included with the proofs.

Personal Computer Disks. Manuscripts may be submitted to *Experimental Neurology* on personal computer disks after the manuscript has been accepted and after all revisions have been incorporated onto the disk. Label the disk with the type of computer used, the type of software and the version number, and the disk format. All tabular material will be typeset conventionally. Art must be prepared as camera-ready copy; see the section on Figures earlier in this Information for Authors.

A hard copy printout of the manuscript that exactly matches the disk file must be supplied. Academic Press will not accept disks without accompanying printouts of all files on the disk. File names must clearly indicate the content of each file. The manuscript will be edited according to the style of the journal, and the proofs must be read carefully by the author. Disks that are not translatable or economical to process will not be used. The publisher reserves the right not to use the disk.

For further information on preparing disks for typesetting conversion, please contact the publisher (Editorial Supervisor, Journal Division, Academic Press, Inc., 1250 Sixth Avenue, San Diego, California 92101; telephone: (619) 699-6415; fax: (619) 699-6800).